

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of claims

Claim 1: (original) A transmitter for use in a network carrying a plurality of data bits, said transmitter comprising:

- a physical layer;
- a first link layer;
- means for providing at least a subset of said plurality of data bits;
- means for making said first link layer match a second link layer in a handheld device;
- means for making said at least said subset of said plurality of data bits available to said first link layer;
- means for making said at least said subset of said plurality of data bits available to said first physical layer;
- means for generating a signal comprising said at least said subset of said plurality of data bits; and
- means for transmitting said signal to said handheld device in a format compliant with and receivable by said second link layer.

Claim 2: (original) The transmitter of claim 1 wherein said matching first and second link layers are infrared data association (IrDA) compliant.

Claim 3: (original) The transmitter of claim 1 wherein said means for transmitting said signal includes:

an on-interval;

an off-interval;

said on-interval corresponding to the presence of at least a portion of at least one of said at least said subset of said plurality of data bits;

said off-interval corresponding to the absence of any of said at least said subset of said plurality of data bits; and

said on and said off intervals further arranged such that a communication interface associated with said handheld device may communicate with another handheld device when said off-interval is present at said communication interface.

Claim 4: (original) The transmitter of claim 3 wherein said handheld device is capable of receiving infrared data signals.

Claim 5: (original) The transmitter of claim 4 wherein said communication interface is compliant with an infrared-data-association (IrDA) specification.

Claim 6: (original) The transmitter of claim 5 wherein said first link layer is compliant with an infrared-data-association (IrDA) specification.

Claim 7: (original) The transmitter of claim 2 wherein said signal is an infrared signal.

Claim 8: (original) The transmitter of claim 7 wherein said signal is a diffuse infrared signal.

Claim 9: (original) The transmitter of claim 8 wherein said signal has a wavelength in the range of substantially 850 nanometers to 1250 nanometers.

Claim 10: (original) The transmitter of claim 9 wherein at least a portion of said signal is comprised of an XML element.

Claim 11: (original) The transmitter of claim 9 wherein said signal is generated by modulating an electric light.

Claim 12: (withdrawn) A handheld device for receiving a unidirectional infrared transmitted signal containing a message over a communication medium, said handheld device comprising:

- a physical layer;

- a link layer;

- means for receiving said transmitted signal to form a received signal;

- means for passing said received signal to said physical layer;

- means for passing said received signal from said physical layer to said link layer; and

- means for utilizing information contained in said received signal to accomplish a task.

Claim 13: (withdrawn) The handheld device of claim 12 wherein said receiving means is a bi-directional infrared communication interface.

Claim 14: (withdrawn) The handheld device of claim 13 wherein said transmitted signal is a diffuse infrared signal.

Claim 15: (withdrawn) The handheld device of claim 14 wherein said transmitted signal is conveyed in a format compatible with said physical layer and said link layer.

Claim 16: (withdrawn) The handheld device of claim 15 wherein said physical layer and said link layer are infrared-data-association (IrDA) compliant.

Claim 17: (withdrawn) The handheld device of claim 16 wherein said transmitted signal includes a broadcast XML element containing said information.

Claim 18: (withdrawn) The handheld device of claim 17 wherein said transmitted signal contains an integrity XML element encapsulating said broadcast XML element.

Claim 19: (withdrawn) The handheld device of claim 18 wherein said receiving means is an infrared-data-association (IrDA) compliant communication interface.

Claim 20: (withdrawn) The handheld device of claim 19 wherein said transmitted signal comprises an on-interval corresponding to the presence of said transmitted signal at said receiving means and an off-interval corresponding to the absence of said transmitted signal at said receiving means, said on-interval and said off-interval being separated by an interval of time, said on-interval further conveying at least a portion of said transmitted signal to said receiving means.

Claim 21: (withdrawn) The handheld device of claim 20 wherein said link layer can accommodate a signal containing less than an entire message during said on-interval.

Claim 22: (withdrawn) The handheld device of claim 19 wherein said transmitted signal includes a first on-interval, a first off-interval occurring immediately after said first on-interval, a second on-interval occurring immediately after said first off-interval and a second off-interval occurring immediately after said second on-interval.

Claim 23: (withdrawn) The handheld device of claim 22 wherein said link layer can accommodate said received signal when a portion of said message is present during said first on-interval and the remainder of said message is present during said second on-interval.

Claim 24: (withdrawn) A method of utilizing executable code in a handheld device comprising the steps of:

receiving a signal at a physical layer communicatively associated with a communication interface to form a received signal;

passing said received signal from said physical layer to a link layer;

extracting information contained in said received signal; and

making said information available to a user of said handheld device.

Claim 25: (withdrawn) The method of claim 24 wherein said communication interface is an infrared-data-association (IrDA) compliant interface.

Claim 26: (withdrawn) The method of claim 25 wherein said received signal is obtained from a transmitter having a emitter link layer.

Claim 27: (withdrawn) The method of claim 26 wherein said emitter link layer is compatible with said link layer.

Claim 28: (withdrawn) The method of claim 27 further including a plug-in, said plug-in for performing said extracting step and said making step.

Claim 29: (original) A method of utilizing executable code in a source device to convey a plurality of bits to a handheld device having a communication interface and a first link layer, said method comprising the steps of:

formatting said at least a subset of said plurality of bits into a data signal;

making said data signal available to a second link layer compatible with said first link layer;

receiving said data signal at a second physical layer; and

making said data signal available to a transmitter for conveying to said communication interface;

whereby said at least a subset of said plurality of bits is conveyed to said handheld device.

Claim 30: (original) The method of claim 29 wherein said communication interface is infrared-data-association (IrDA) compliant.

Claim 31: (original) The method of claim 30 wherein said data signal is an infrared signal.

Claim 32: (original) The method of claim 31 wherein said data signal is a diffuse infrared signal.

Claim 33: (original) The method of claim 32 wherein said data signal contains an XML element.

Claim 34: (withdrawn) A unidirectional computer-readable data signal for modifying the operation of a handheld device having an infrared-data-association (IrDA) compliant communication interface, said data signal comprising:

machine-readable information encoded in an infrared-data-association (IrDA) compliant format for processing by said handheld device, said information having been received from a diffuse infrared transmitter conveying said data signal; and

whereby said operation of said handheld device is modified upon processing said information.

Claim 35: (withdrawn) The computer-readable data signal of claim 34 wherein said communication interface is a bi-directional communication interface.

Claim 36: (withdrawn) The computer-readable data signal of claim 35 wherein said information is comprised of XML elements.

Claim 37: (withdrawn) The computer-readable data signal of claim 36 wherein said information is processed by a plug-in running on said handheld device.

Claim 38: (withdrawn) The computer-readable data signal of claim 34 wherein said diffuse infrared transmitter further includes an infrared-data-association (IrDA) compliant link layer.

Claim 39: (withdrawn) The computer-readable data signal of claim 34 wherein said diffuse infrared transmitter generates said data signal by modulating an electric light.

Claim 40: (withdrawn) A computer-readable data signal generated by a transmitting device for modifying the operation of a handheld device, said data signal comprising:

machine-readable information obtained from at least a subset of a plurality of bits making up said data signal, said information organized into an infrared-data-association (IrDA) compliant format by interacting with a first link layer in said transmitting device before transmission as a diffuse infrared signal, said information for modifying the operation of said handheld device upon interacting with a second link layer in said handheld device.

Claim 41: (withdrawn) The computer-readable data signal of claim 40 wherein said first link layer and said second link layer are of the same type.

Claim 42: (withdrawn) The computer-readable data signal of claim 40 wherein said machine-readable information includes an XML element.

Claim 43: (original) A method for conveying at least a subset of a plurality of data bits from a transmitter to a handheld device, said method comprising the steps of:

making a first link layer in said transmitter match a second link layer in said handheld device;

providing said at least said subset of said plurality of data bits;

making said at least said subset of said plurality of data bits available to said first link layer;

receiving said at least said subset of said plurality of data bits at a first physical layer in said transmitter;

generating an infrared signal comprising said at least said subset of said plurality of data bits; and

conveying said infrared signal to a communication interface associated with said handheld device in a format compliant with and receivable by said second link layer;

whereby at least said subset of said plurality of data bits is conveyed to said handheld device.

Claim 44: (original) The method of claim 43 wherein said communication interface is a bi-directional communication interface.

Claim 45: (original) The method of claim 44 wherein said matching first and second link layers are infrared-data-association (IrDA) compliant.

Claim 46: (original) The method of claim 45 wherein said communication interface is an infrared-data-association (IrDA) compliant communication interface.

Claim 47: (original) The method of claim 46 wherein said infrared signal is a diffuse infrared signal having a wavelength in the range of substantially 850 nanometers to 1250 nanometers.

Claim 48: (original) The method of claim 43 wherein said infrared signal includes:

an on-interval;

an off-interval;

said on-interval corresponding to the presence of at least a portion of one of said at least said subset of said plurality of data bits;

said off-interval corresponding to the absence of said at least said subset of said plurality of data bits; and

said on-interval and said off-interval further arranged such that said communication interface can transmit an IrDA-compliant-signal when said off-interval is present at said communication interface.

Claim 49: (withdrawn) A method of receiving a unidirectional-infrared-data-signal from a transmitter comprising:

receiving said data signal at a communication interface to form a received signal;

passing said received signal from said communication interface to a physical layer;

making said received signal available to a link layer; and

utilizing information contained in said received signal to accomplish a task.

Claim 50: (withdrawn) The method of claim 49 wherein said communication interface is a bi-directional communication interface.

Claim 51: (withdrawn) The method of claim 50 wherein said communication interface is an infrared-data-association (IrDA) compliant communication interface.

Claim 52: (withdrawn) The method of claim 51 wherein said data signal is a diffuse infrared signal.

Claim 53: (withdrawn) The method of claim 52 wherein said data signal contains a message.

Claim 54: (withdrawn) The method of claim 53 wherein said data signal is comprised of an on-interval corresponding to the presence of said data signal at said communication interface and an off-interval corresponding to the absence of said data signal at said communication interface, said on-interval and said off-interval separated by an interval of time, said on-interval further conveying at least a portion of said data signal to said physical layer.

Claim 55: (withdrawn) The method of claim 54 wherein said link layer can accommodate said received signal containing only a portion of said message during said on-interval.

Claim 56: (withdrawn) The method of claim 53 wherein said data signal includes a first on-interval, a first off-interval occurring immediately after said first on-interval, a second on-interval occurring immediately after said first off-interval and a second off-interval occurring immediately after said second on-interval.

Claim 57: (withdrawn) The method of claim 56 wherein said link layer utilizes said received signal when a portion of said message is present during said first on-interval and the remainder of said message is present during said second on-interval.

Claim 58: (new) The transmitter of claim 1 wherein said signal is a unidirectional infrared transmitted signal.

Claim 59: (new) The transmitter of claim 58 wherein said handheld device is capable of receiving said signal containing a message over a communication medium, said handheld device including:

- a handheld device physical layer;
- means for receiving said signal to form a received signal;
- means for passing said received signal to said handheld device physical layer;
- means for passing said received signal from said handheld device physical layer to said second link layer; and
- means for utilizing information contained in said received signal to accomplish a task.

Claim 60: (new) The transmitter of claim 59 wherein said receiving means is a bi-directional infrared communication interface.

Claim 61: (new) The transmitter of claim 59 wherein said signal is conveyed in a format compatible with said handheld device physical layer and said second link layer.

Claim 62: (new) The transmitter of claim 59 wherein said handheld device physical layer and said second link layer are infrared-data-association (IrDA) compliant.

Claim 63: (new) The transmitter of claim 59 wherein said signal includes a broadcast XML element containing said information.

Claim 64: (new) The transmitter of claim 1 wherein said signal contains an integrity XML element encapsulating said broadcast XML element.

Claim 65: (new) The transmitter of claim 59 wherein said receiving means is compliant with an infrared-data-association (IrDA) interface specification.

Claim 66: (new) The transmitter of claim 59 wherein said signal comprises an on-interval corresponding to the presence of said signal at said receiving means and an off-interval corresponding to the absence of said transmitted signal at said receiving means, said on-interval and said off-interval being separated by an interval of time, said on-interval further conveying at least a portion of said signal to said receiving means.

Claim 67: (new) The transmitter of claim 66 wherein said link layer can accommodate wherein said signal contains less than an entire message during said on-interval.

Claim 68: (new) The transmitter of claim 1 wherein said signal includes a first on-interval, a first off-interval occurring immediately after said first on-interval, a second on-interval occurring immediately after said first off-interval and a second off-interval occurring immediately after said second on-interval.

Claim 69: (new) The transmitter of claim 68 wherein said second link layer can accommodate said received signal when a portion of said message is present during said first on-interval and the remainder of said message is present during said second on-interval.

Claim 70: (new) The method of claim 29 further comprising the steps of:
 receiving said data signal at a first physical layer communicatively associated with said communication interface to form a received signal;
 passing said received signal from said first physical layer to said first link layer;
 extracting information contained in said received signal; and
 making said information available to a user of said handheld device.

Claim 71: (new) The method of claim 70 further including a plug-in, said plug-in for performing said extracting step and said making step.

Claim 72: (new) The transmitter of claim 1 wherein said signal is a unidirectional computer-readable data signal for modifying the operation of said handheld device, said unidirectional computer-readable data signal comprising:

machine-readable information encoded in an infrared-data-association (IrDA) compliant format for processing by said handheld device; and

wherein the operation of said handheld device is modified upon processing said information.

Claim 73: (new) The transmitter of claim 72 wherein said information is processed by a plug-in running on said handheld device.

Claim 74: (new) The transmitter of claim 1 wherein said signal is generated by modulating an electric light.

Claim 75: (new) At least one computer node for carrying out the method according to claim 29.

Claim 76: (new) At least one live communications network comprising at least one computer node according to the method of claim 29.

Claim 77: (new) A computer data signal embodied in electromagnetic signals traveling over at least one live communications network carrying information capable of causing at least one computer node in said at least one live communications network to practice the method of claims 29.

Claim 78: (new) At least one computer readable medium having instructions embodied therein for the practice of the method of claim 29.

Claim 79: (new) At least one computer node for carrying out the method according to claim 43.

Claim 80: (new) At least one live communications network comprising at least one computer node according to the method of claim 43.

Claim 81: (new) A computer data signal embodied in electromagnetic signals traveling over at least one live communications network carrying information capable of causing at least one computer node in said at least one live communications network to practice the method of claims 43.

Claim 82: (new) At least one computer readable medium having instructions embodied therein for the practice of the method of claim 43.